

EPRINTS BELOW UPWARDS

(THE MANUAL THAT WAS
MISSED)

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Preface

As a person who is passionate in academic transmission of knowledge I found it really important to have a repository where scholarly publications could be archived and easily retrieved. My Institution / University does not have any such archiving facilities. I sought the advice of my teacher (who else other than google) which gave me some options of softwares which could be installed in a website. After a thorough research I found Eprint software fitted the billing to the core. On top of it it came free as it was open source. As with all open source software this software too lacked documentation. None of the manuals I saw in the internet was complete. Even the ones I had access to assumed that I had a basic fundamental knowledge of server managment. I had to struggle for nearly 3 months before I hit “Eureka”.

Now I have embarked on creating an installation manual for the software which does not assume that the reader has basic knowledge of server management. The codes and illustrations in this book were taken from my own installation. I could have fallen here and there while taking my baby steps towards completing this project. I hope readers would appreciate this and forgive me for any errors if any in this manuscript.

Please mail in your comments and suggestions to: drtbalu@gmail.com



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About the author



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Introduction

In this digital era it is imperative to safeguard and showcase our documents / creations. Gradually world is moving towards the inevitable paperless domain. This is where reliable archiving facilities become rather important. Towards this ultimate end a large number of software have been created.

Ideal archiving software should:

1. Archive the submitted material with ease
2. Should have a robust database for storing data
3. Should expose the digital content to search engines
4. Should be easy to install and maintain
5. Should be secure
6. It should be compliant with [open archives initiative protocol](#) for metadata harvesting
7. Last but not the least it should be cost effective

One software that fulfills all the above said criteria with ease is Eprints¹. This is indeed a free and open source software which can be used to build open access repositories. Eprints has many features commonly seen in popular document management systems. This software is ideal for creating Institutional [repositories](#)² and scientific journals.

This software was created by University of Southampton school of Electronics and Computer science in 2000. This was indeed a logical fall out of [Santa Fe Meeting](#)³ which launched the open archives Initiative protocol ([OAI](#)).

[Eprints](#) software is actually a web based command line application based on [LAMP](#)⁴ architecture. The configuration files of EPRINTS are written in Perl / XML and hence can successfully run under multiple operating systems like Linux, Windows, Mac, and Solaris. It is hence easy to edit the configuration files according to one's requirement.

Major problem which the author noticed with Eprints is that its literature is not adequate for a novice to install and maintain a repository. For any software to become popular it should be easy to install and operate. Eprints actually an enigma, because of inadequate literature and forum support. This has prompted the author to write this manuscript with an intention of taking this unique software to the doorsteps of even novice users.

Is it really difficult to install and maintain an Eprint repository?

The answer to this question is a frank no. It is only the paucity of literature that makes the task daunting. In this manuscript the reader will be taken in a step by step fashion through the installation protocol of Eprints in Ubuntu 12 server. Ubuntu 12 has been chosen not as personal preference but because of the convenience it provides since preconfigured Eprint installation scripts are available for ubuntu which takes care of dependency problems. For a novice dependency problems could be hair raising.

The aim of the book is not creating a technical manual of Eprints, but to make installation and maintenance of Eprint site a bit easier for novice.

Suggested tools to be used in Eprint installation:

1. A [virtual Private server](#) ⁵ with full root access. This is the most important requisite for eprint installation. After complete installation eprint server takes over the entire server. (*You cannot install eprints in shared hosting*). Technically speaking it is possible to install eprints inside a folder of a server leaving the server free for other installations. It is an arduous task which needs lot of specialization and is left for those Geeks out there.
2. Linux installation – Since this manuscript has been created with [Ubuntu 12](#) experience, it would be prudent if the virtual private server (now on it will be termed as vps) is loaded with this operating system.
3. A working LAMP installation in the VPS (Virtual private server).
4. Installation of [Webmin](#) ⁶ which is a open source version of Cpanel. This really makes server configuration easy for a novice because of its [GUI](#).
5. Working Internet connection (This is important).
6. SSH client ([Putty](#)) SSH is an acronym for secure shell ⁷. This is used for accessing the virtual server operating system remotely from a desktop. This is usually performed using command line. PUTTY can be downloaded and installed in windows / Linux machines. It is a free software.

A small word on installing PUTTY to your desktop:

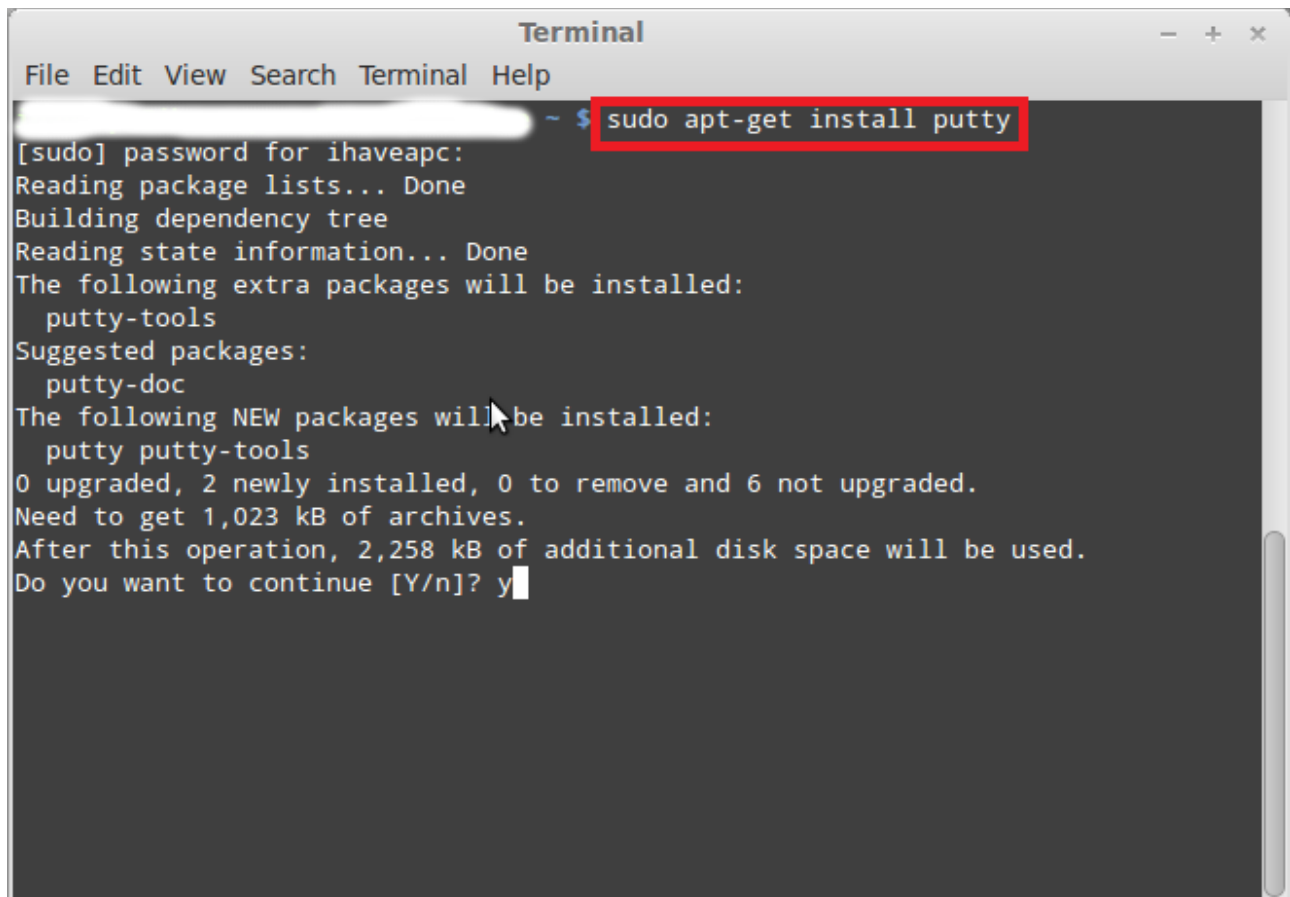
If your desktop operating system is windows then windows version of PUTTY can be downloaded and installed by double clicking the installer. If the desktop contains Ubuntu 12 operating system then PUTTY can be installed by using the command given below:

Installing PUTTY in Ubuntu 12 desktop:

Press ctrl-ALT-T

This will invoke the terminal.

```
sudo apt-get install putty
```

A screenshot of a Linux terminal window titled "Terminal". The window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The terminal shows the command `sudo apt-get install putty` being executed. The output includes the password prompt, package list reading, dependency tree building, and a list of extra packages to be installed (putty-tools, putty-doc). It also shows the disk space requirements and a confirmation prompt to continue. The command prompt is `~ $`.

```
Terminal
File Edit View Search Terminal Help
~ $ sudo apt-get install putty
[sudo] password for ihaveapc:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  putty-tools
Suggested packages:
  putty-doc
The following NEW packages will be installed:
  putty putty-tools
0 upgraded, 2 newly installed, 0 to remove and 6 not upgraded.
Need to get 1,023 kB of archives.
After this operation, 2,258 kB of additional disk space will be used.
Do you want to continue [Y/n]? y
```

Virtual Private Server

Virtual private servers can be secured from Hosting Providers like:

Godaddy

Siteground

Hosting providers usually provide VPS access on monthly / yearly tariff.

Amazon E2 Instance:

This is another way of securing a VPS.

A quick foray to their websites will provide relevant information.

Before booking a VPS one has to choose a domain name to go with it. Domain name can be booked with any of the Hosting providers with whom VPS is going to be hosted. While booking a VPS one need to give the domain name also.

Ideal VPS configuration:

Ubuntu Linux 12

CPU 1.68 GHZ

Disk space 50-60 GB

IP address – minimum of one

Configuring VPS:

Before configuring the VPS one should choose ubuntu 12 as the operating system. It has to be specified while making the purchase.

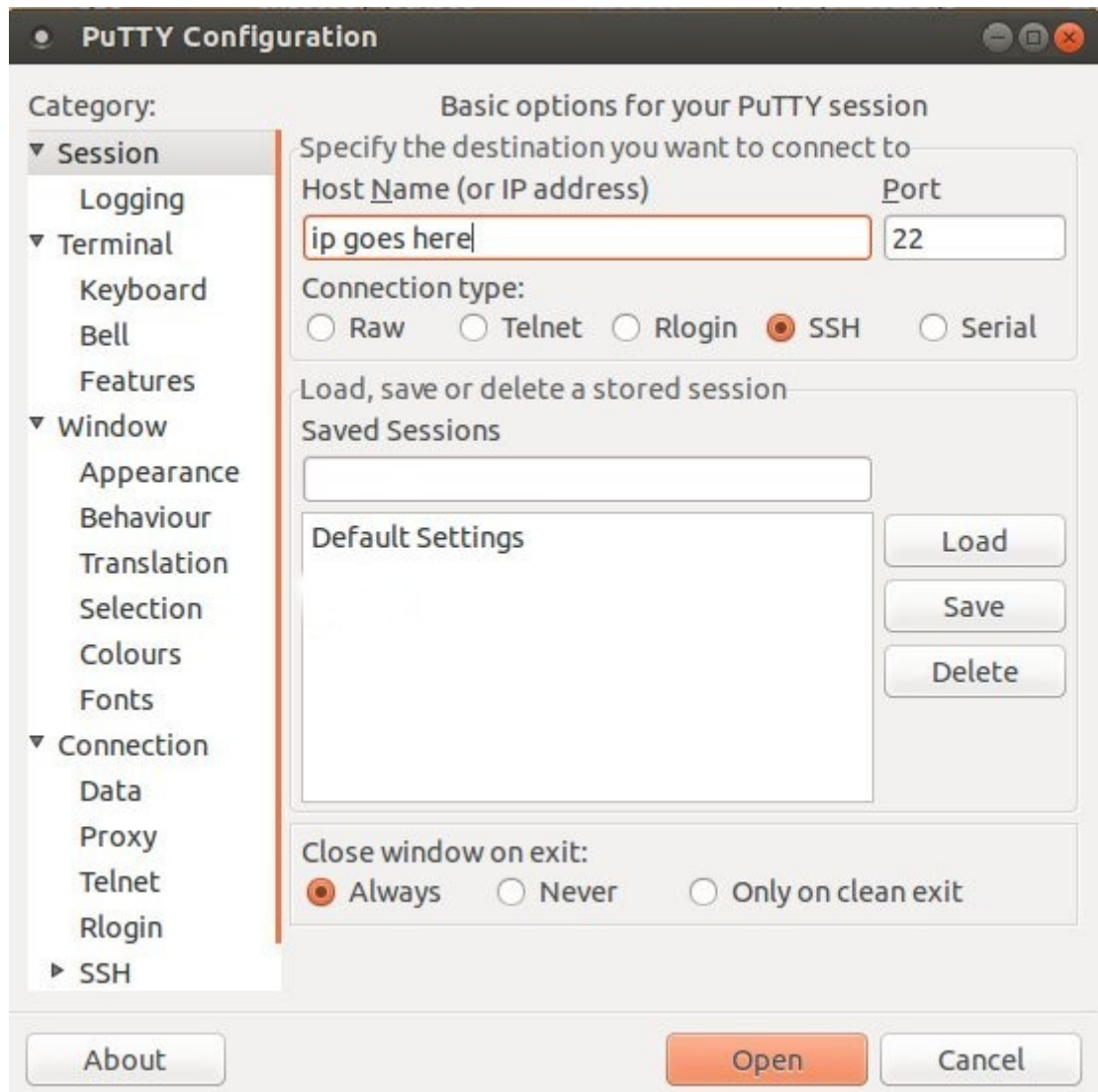
After the VPS is set up the following details will be sent.

1. Url for VPS control panel
2. IP number assigned to the VPS
3. Root password for the virtual machine

Using SSH client PUTTY to configure VPS

SSH client is the easy and secure way to log into your VPS.

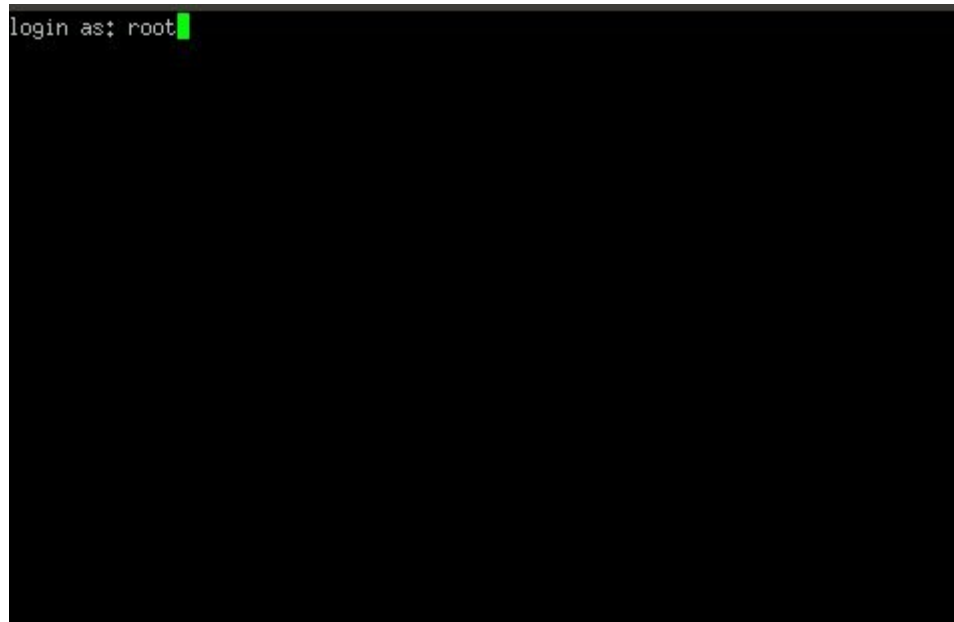
PUTTY is started:



In the hostname column the IP allotted to the VPS is entered.

Enter 22 under Port.

Click Open.



In the log in screen of PUTTY enter *root* after login as:

Press ENTER key.



In the next screen the root password will have to be entered.

Press ENTER again

It will take you into the operating system.

Caution:

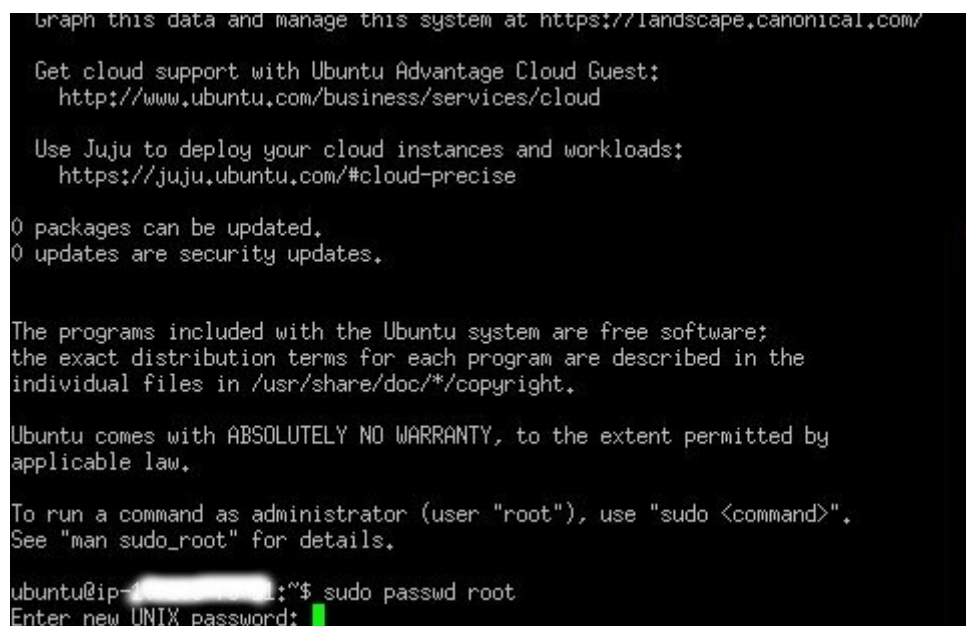
It should be noted that by default root user is disabled in Ubuntu. If your service provider has enabled it root log in can be performed.

If root user has been disabled in the VPS then the steps given below will have to be followed in order to enable it. Because root user has to be enabled before Eprint installation could progress.

Using SSH client PUTTY log into the VPS with the user name / pw supplied by the service provider. Key in the commands given in the command prompt window.

```
$ sudo passwd root
[sudo] password "user name":
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
```

The above command would effectively enable root user with associated password preferred by you.



```
Graph this data and manage this system at https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
  http://www.ubuntu.com/business/services/cloud

Use Juju to deploy your cloud instances and workloads:
  https://juju.ubuntu.com/#cloud-precise

0 packages can be updated.
0 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-10-10-10-10:~$ sudo passwd root
Enter new UNIX password: 
```

Screen shot 1 showing sudo passwd root command

```
Get cloud support with Ubuntu Advantage Cloud Guest:
  http://www.ubuntu.com/business/services/cloud

Use Juju to deploy your cloud instances and workloads:
  https://juju.ubuntu.com/#cloud-precise

0 packages can be updated.
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applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-10-0-1-10:~$ sudo passwd root
Enter new UNIX password:
Retype new UNIX password: █
```

Screen shot 2 showing password change for root log in effected. Password needs to be typed twice in this screen before pressing enter key. Caution: Typed password will not be revealed on the screen. The screen will look empty as you key in the password.

```
  http://www.ubuntu.com/business/services/cloud

Use Juju to deploy your cloud instances and workloads:
  https://juju.ubuntu.com/#cloud-precise

0 packages can be updated.
0 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-10-0-1-10:~$ sudo passwd root
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
ubuntu@ip-10-0-1-10:~$ █
```

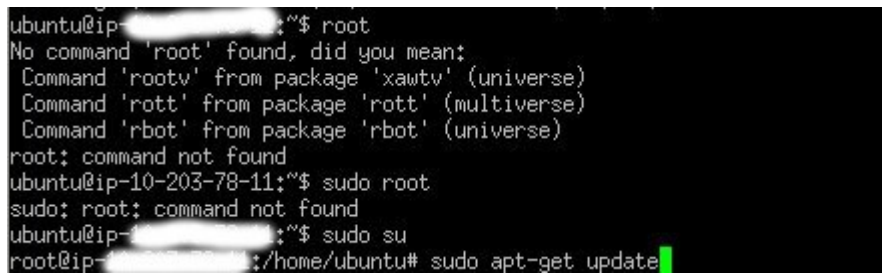
Screen shot 3 showing confirmation of pass word update

Installation of Apache Web Server

[Apache](#) is a free open source server software. It needs to be installed. Before proceeding with Apache installation the Ubuntu operating system needs to be updated.

Using the terminal window of SSH client Putty key in the following command:

```
sudo apt-get update  
sudo apt-get install apache2
```

A screenshot of a terminal window with a black background and white text. The user 'ubuntu' is at a prompt 'ubuntu@ip-10-203-78-11:~\$' and enters 'root'. The system responds with 'No command 'root' found, did you mean:' followed by suggestions: 'rootv' from package 'xawtv' (universe), 'roth' from package 'roth' (multiverse), and 'rbot' from package 'rbot' (universe). The user then enters 'sudo root', and the system responds 'root: command not found'. The user enters 'sudo su', and the system responds 'sudo: root: command not found'. The user then enters 'sudo apt-get update', and the system responds 'root@ip-10-203-78-11:/home/ubuntu# sudo apt-get update' with a green cursor at the end.

```
ubuntu@ip-10-203-78-11:~$ root  
No command 'root' found, did you mean:  
Command 'rootv' from package 'xawtv' (universe)  
Command 'roth' from package 'roth' (multiverse)  
Command 'rbot' from package 'rbot' (universe)  
root: command not found  
ubuntu@ip-10-203-78-11:~$ sudo root  
sudo: root: command not found  
ubuntu@ip-10-203-78-11:~$ sudo su  
root@ip-10-203-78-11:/home/ubuntu# sudo apt-get update
```

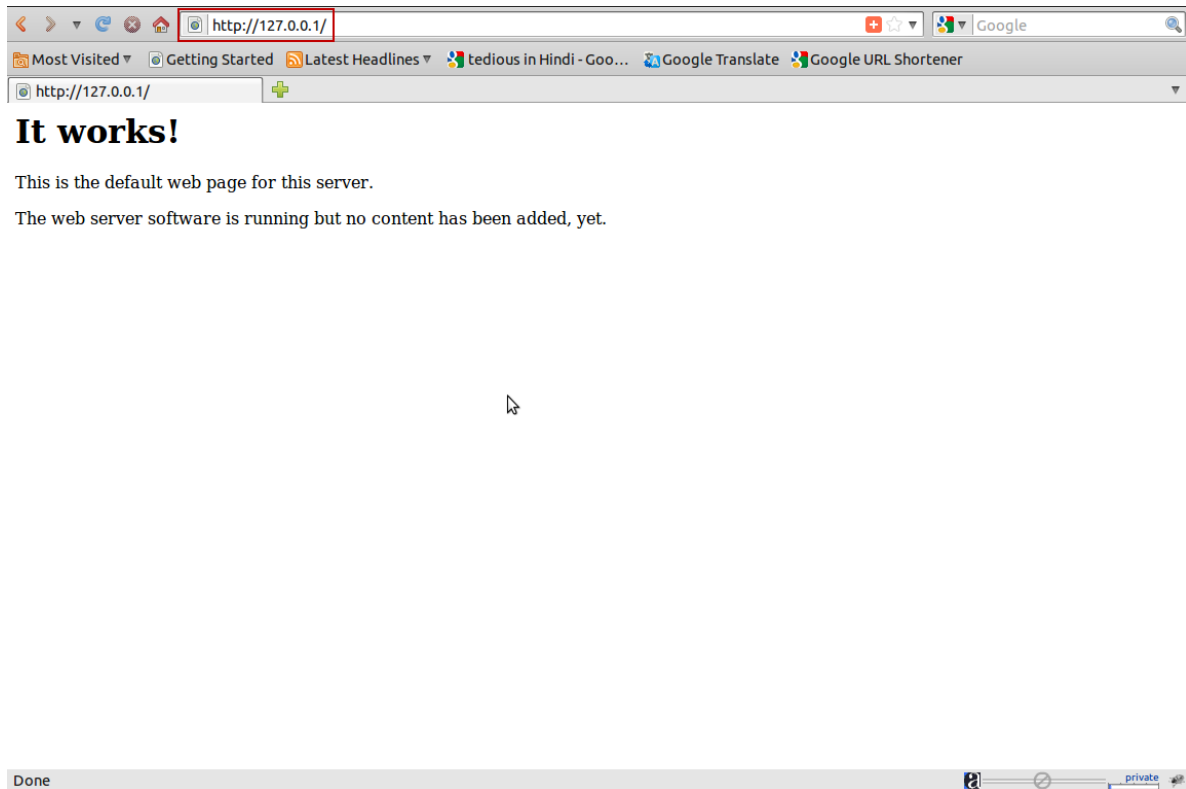
Screen shot showing sudo apt-get update

```
Hit http://us-east-1.ec2.archive.ubuntu.com precise-updates/main Sources
Hit http://security.ubuntu.com precise-security/universe Translation-en
Hit http://us-east-1.ec2.archive.ubuntu.com precise-updates/universe Sources
Get:13 http://us-east-1.ec2.archive.ubuntu.com precise-updates/main amd64 Packag
es [634 kB]
Hit http://us-east-1.ec2.archive.ubuntu.com precise-updates/universe amd64 Packa
ges
Hit http://us-east-1.ec2.archive.ubuntu.com precise-updates/main i386 Packages
Get:14 http://us-east-1.ec2.archive.ubuntu.com precise-updates/universe i386 Pac
kages [209 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com precise-updates/main TranslationI
ndex [3,564 B]
Get:16 http://us-east-1.ec2.archive.ubuntu.com precise-updates/universe Translat
ionIndex [2,850 B]
Get:17 http://us-east-1.ec2.archive.ubuntu.com precise/main Translation-en [726
kB]
Hit http://us-east-1.ec2.archive.ubuntu.com precise/universe Translation-en
Get:18 http://us-east-1.ec2.archive.ubuntu.com precise-updates/main Translation-
en [290 kB]
Hit http://us-east-1.ec2.archive.ubuntu.com precise-updates/universe Translation
-en
Fetched 4,042 kB in 2s (1,702 kB/s)
Reading package lists... Done
root@ip-10-10-10-10:~#
```

Screen shot after update process is completed

Pl dont forget to press enter after each line of command.

After Apache installation is completed successfully it needs to be tested. This can be done by keying in the IP number associated with the VPS to the address bar of the browser. You should see the page saying "It Works". If this page is displayed then it indicates that apache server has been installed and is running fine.



Screenshot of the page indicating successful installation of apache server

If on keying the IP number associated with the VPS to the address bar of browser the default page “It works” is not displayed / page not found error is displayed then key in the following command to the command terminal of SSH PUTTY client.

sudo service apache2 restart

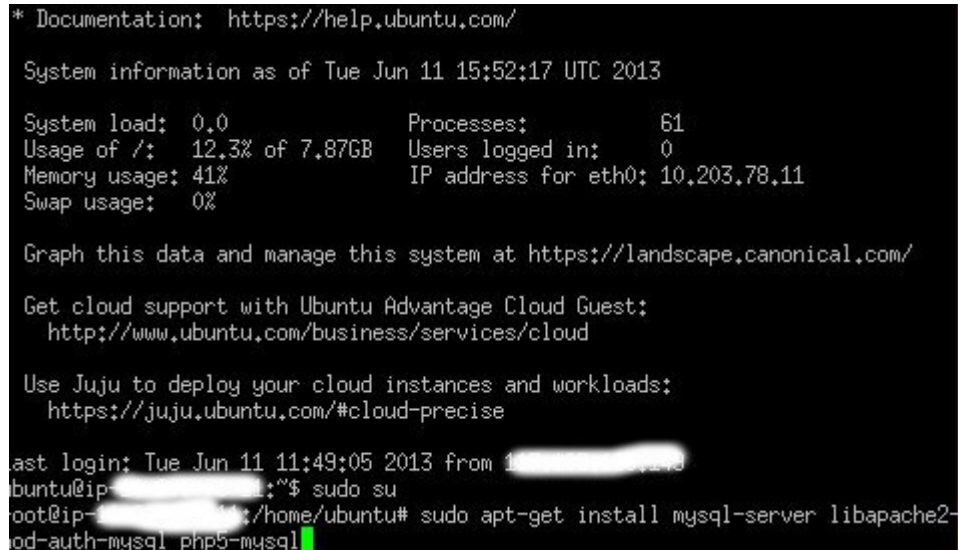
This command prompt effectively restarts the apache server.

Installing MySQL

My [SQL](#)⁸ is a powerful database software. This is used to manage database, organizes and retrieves data from the database. This popular Relational Database System runs as a server providing multiuser access to a number of databases. My SQL actually does not have a GUI and needs to be manipulated using command line tools. For installing Eprints not much knowledge of structured query language is needed as the software is capable of configuring SQL server automatically.

To Install MySQL open the terminal window using ssh client PUTTY after logging in as root you can type the following command:

```
sudo apt-get install mysql-server libapache2-mod-auth-mysql php5-mysql
```



```
* Documentation: https://help.ubuntu.com/

System information as of Tue Jun 11 15:52:17 UTC 2013

System load: 0.0          Processes:           61
Usage of /:  12.3% of 7.87GB Users logged in:       0
Memory usage: 41%         IP address for eth0: 10.203.78.11
Swap usage:  0%

Graph this data and manage this system at https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

Use Juju to deploy your cloud instances and workloads:
https://juju.ubuntu.com/#cloud-precise

Last login: Tue Jun 11 11:49:05 2013 from 10.203.78.11
ubuntu@ip-10-203-78-11:~$ sudo su
root@ip-10-203-78-11:/home/ubuntu# sudo apt-get install mysql-server libapache2-
mod-auth-mysql php5-mysql
```

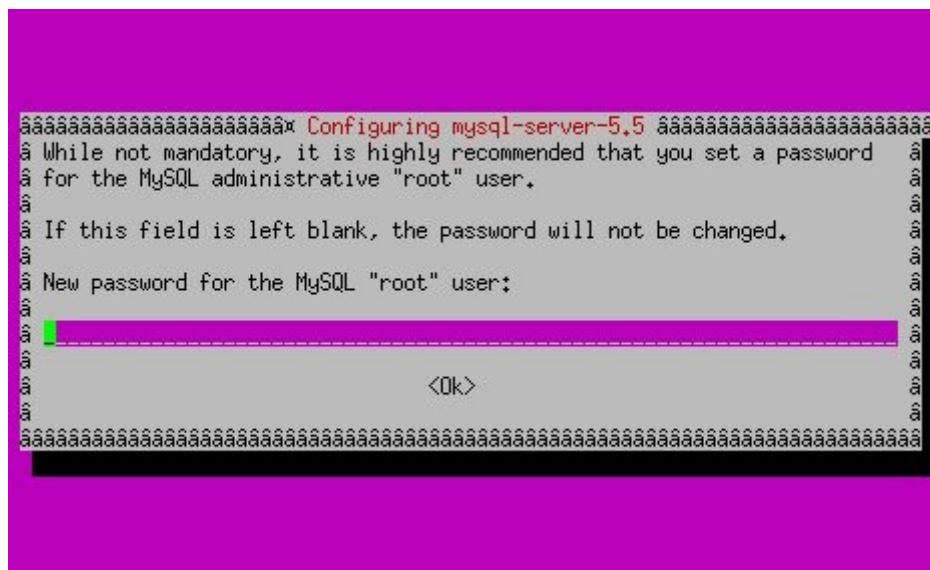
Screen shot showing the command keyed in to install mysql server


```

Last login: Tue Jun 11 11:49:05 2013 from [REDACTED]
ubuntu@ip-10-10-10-11:~$ sudo su
root@ip-10-10-10-11:/home/ubuntu# sudo apt-get install mysql-server libapache2-
mod-auth-mysql php5-mysql
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  libdbd-mysql-perl libdbi-perl libhtml-template-perl libmysqlclient18
  libnet-daemon-perl libplrpc-perl libterm-readkey-perl mysql-client-5.5
  mysql-client-core-5.5 mysql-common mysql-server-5.5 mysql-server-core-5.5
  php5-common php5-fpm
Suggested packages:
  libipc-sharedcache-perl tinyca mailx php5-suhosin php-pear
The following NEW packages will be installed:
  libapache2-mod-auth-mysql libdbd-mysql-perl libdbi-perl
  libhtml-template-perl libmysqlclient18 libnet-daemon-perl libplrpc-perl
  libterm-readkey-perl mysql-client-5.5 mysql-client-core-5.5 mysql-common
  mysql-server mysql-server-5.5 mysql-server-core-5.5 php5-common php5-fpm
  php5-mysql
0 upgraded, 17 newly installed, 0 to remove and 40 not upgraded.
Need to get 30.9 MB of archives.
After this operation, 107 MB of additional disk space will be used.
Do you want to continue [Y/n]? █

```

Screen shot showing confirmation query after keying in the command to install mysql server



After installation mysql configuration screen asks for root password setting. You need to choose a password key it in. Press tab the ok button will be highlighted. On pressing the enter key the next confirmation password screen will be displayed asking for password retype.

During installation MySQL will ask you to set a root password. Give a root password of your choice. If you have missed this step, it can also be easily done through MySQL shell. By default MySQL does not have a root password.

MySQL now needs to be activated. You need to key in the following command in the command prompt window to activate it:

```
sudo mysql_install_db
```

The next step one need to take is to secure the MySQL database server installation.

This can be done by keying in the following script in the command prompt window.

```
sudo /usr/bin/mysql_secure_installation
```

```

Creating config file /etc/php5/fpm/php.ini with new version
Setting up libapache2-mod-auth-mysql (4.3.9-13ubuntu3) ...
Setting up libhtml-template-perl (2.10-1) ...
Setting up mysql-server (5.5.31-0ubuntu0.12.04.2) ...
Setting up php5-mysql (5.3.10-1ubuntu3.6) ...
Processing triggers for libc-bin ...
ldconfig deferred processing now taking place
root@ip-10-10-10-10:~# sudo /usr/bin/mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MySQL
SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!

In order to log into MySQL to secure it, we'll need the current
password for the root user. If you've just installed MySQL, and
you haven't set the root password yet, the password will be blank,
so you should just press enter here.

Enter current password for root (enter for none): █

```

Screen shot showing the prompt asking for a change of root password

The command prompt will now ask for the root password you had keyed in the previous window. If you had not keyed in any password then all you need to do is to press the enter key, or if you had chosen a root password then key it in and press the enter key.

```

http://www.ubuntu.com/business/services/cloud

Use Juju to deploy your cloud instances and workloads:
https://juju.ubuntu.com/#cloud-precise

0 packages can be updated.
0 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-10-10-10-10:~$ sudo passwd root
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
ubuntu@ip-10-10-10-10:~$ █

```

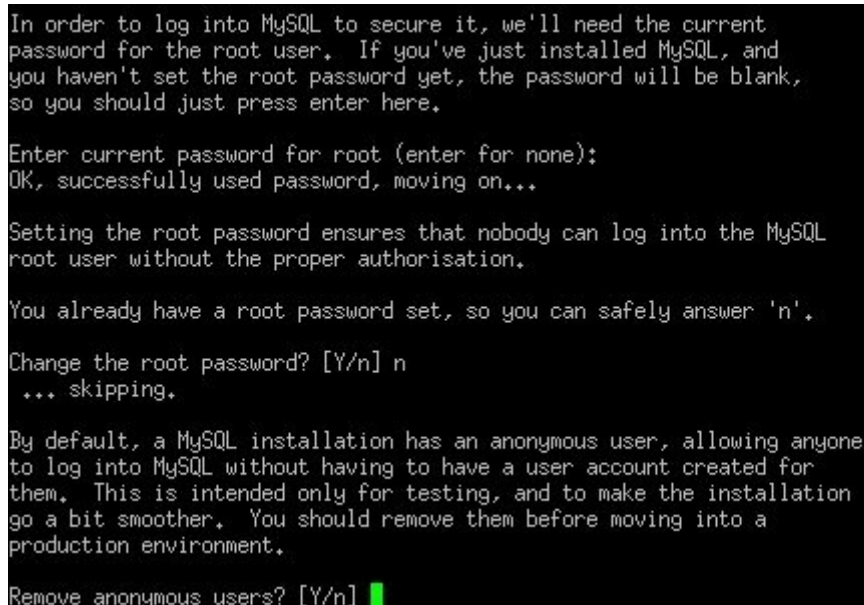
Password change confirmation screen

The next prompt will ask whether you need to set / change the root password. If you want to change it you need to key in the new password and press the enter key. You need to do it twice for confirmation.

It should be borne in mind the default MySQL server installation has an anonymous user enabled. So one can log into MySQL database as a anonymous user. This access has been provided in order to conduct tests to find out whether MySQL server has been installed. In production environment anonymous user to the database need to be disabled. The previous step is intended to secure this installation.

When the command prompt asks:

Remove anonymous users? [Y/n] – You need to give yes by keying in “Y” and pressing the enter key.



```
In order to log into MySQL to secure it, we'll need the current
password for the root user. If you've just installed MySQL, and
you haven't set the root password yet, the password will be blank,
so you should just press enter here.

Enter current password for root (enter for none):
OK, successfully used password, moving on...

Setting the root password ensures that nobody can log into the MySQL
root user without the proper authorisation.

You already have a root password set, so you can safely answer 'n'.

Change the root password? [Y/n] n
... skipping.

By default, a MySQL installation has an anonymous user, allowing anyone
to log into MySQL without having to have a user account created for
them. This is intended only for testing, and to make the installation
go a bit smoother. You should remove them before moving into a
production environment.

Remove anonymous users? [Y/n] █
```

Screen shot showing command prompt asking whether anonymous users can be removed. The answer should obviously be yes.

For security purposes normally root should be able to connect to the database only from the “Local Host”. This can be ensured by giving the following command for the next prompt which is likely to come into your command prompt window:

Disallow root login remotely? [Y/n]: You need to press “Y” and press enter key following it.

```
Setting the root password ensures that nobody can log into the MySQL
root user without the proper authorisation.

You already have a root password set, so you can safely answer 'n'.

Change the root password? [Y/n] n
... skipping.

By default, a MySQL installation has an anonymous user, allowing anyone
to log into MySQL without having to have a user account created for
them. This is intended only for testing, and to make the installation
go a bit smoother. You should remove them before moving into a
production environment.

Remove anonymous users? [Y/n] yes
... Success!

Normally, root should only be allowed to connect from 'localhost'. This
ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] Y
```

By default MySQL [database](#) server comes with a Test database already installed. This is meant for testing purposes only. It should be removed when moving to a production environment.

In the next command prompt:

Remove test database and access to it? [Y/n]: You need to press “Y” and press enter key later. This removes test database.

```
Disallow root login remotely? [Y/n] yes
... Success!

By default, MySQL comes with a database named 'test' that anyone can
access. This is also intended only for testing, and should be removed
before moving into a production environment.

Remove test database and access to it? [Y/n] yes
- Dropping test database...
... Success!
- Removing privileges on test database...
... Success!

Reloading the privilege tables will ensure that all changes made so far
will take effect immediately.

Reload privilege tables now? [Y/n] Y
```

The next prompt asks:

Reload privilege tables now? [Y/n]: You need to key in “Y” and press enter key later.

After cleaning up the MySQL installation has completed.

It is time now to start your MySQL server. Key in the command given below in the command prompt window:

```
sudo service mysql start
```

This will start MySQL server.

```
root@ip-10-10-10-10:~# sudo service mysql start
start: Job is already running: mysql
root@ip-10-10-10-10:~#
```

Installation of PHP

PHP also known as (Hypertext preprocessor) is an open source web scripting language used to create dynamic web pages. It is a server side scripting language installed in a server. This scripting language was originally created by Rasmus Lerdorf in 1995⁹. This scripting language is operating system independent and can be installed as part of any server or as a stand alone application too.

In order to install PHP to ubuntu server log into the virtual machine using SSH client (PUTTY) as root. In the ensuing terminal key in the command given below:

```
sudo apt-get install php5 libapache2-mod-php5 php5-mcrypt
```

You may need to answer “yes” twice in the command prompt. PHP will install itself.

```
root@ip-10-10-10-10: /home/ubuntu# sudo apt-get install php5 libapache2-mod-php5
php5-mcrypt
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  apache2-mpm-prefork libmcrypt4 php5-cli
Suggested packages:
  php-pear libmcrypt-dev mcrypt
The following packages will be REMOVED:
  apache2-mpm-worker
The following NEW packages will be installed:
  apache2-mpm-prefork libapache2-mod-php5 libmcrypt4 php5 php5-cli php5-mcrypt
0 upgraded, 6 newly installed, 1 to remove and 40 not upgraded.
Need to get 6,296 kB of archives.
After this operation, 17.3 MB of additional disk space will be used.
Do you want to continue [Y/n]? █
```

Screen shot asking for confirmation to install php


```

Unpacking libmcrypt4 (from .../libmcrypt4_2.5.8-3.1_amd64.deb) ...
Selecting previously unselected package php5.
Unpacking php5 (from .../php5_5.3.10-1ubuntu3.6_all.deb) ...
Selecting previously unselected package php5-cli.
Unpacking php5-cli (from .../php5-cli_5.3.10-1ubuntu3.6_amd64.deb) ...
Selecting previously unselected package php5-mcrypt.
Unpacking php5-mcrypt (from .../php5-mcrypt_5.3.5-0ubuntu1_amd64.deb) ...
Processing triggers for man-db ...
Setting up libapache2-mod-php5 (5.3.10-1ubuntu3.6) ...

Creating config file /etc/php5/apache2/php.ini with new version
* Restarting web server apache2
... waiting [ OK ]
Setting up libmcrypt4 (2.5.8-3.1) ...
Setting up php5 (5.3.10-1ubuntu3.6) ...
Setting up php5-cli (5.3.10-1ubuntu3.6) ...

Creating config file /etc/php5/cli/php.ini with new version
update-alternatives: using /usr/bin/php5 to provide /usr/bin/php (php) in auto mode.
Setting up php5-mcrypt (5.3.5-0ubuntu1) ...
Processing triggers for libc-bin ...
ldconfig deferred processing now taking place
root@ip-10.10.10.10:~#

```

Command prompt window as seen after completion of php installation

Now you need to restart apache to complete the settings change. This can be done by keying the command given below.

```
sudo service apache2 restart
```

You may want to add useful PHP modules and libraries to your virtual machine. This can be done using the same command prompt window. For a beginner I would advice these module / libraries installation be deferred till Webmin is installed. It would provide a nice GUI for manipulating these modules and libraries. The curious can attempt command prompt installation method given below.

To see the possible libraries / modules available key in the command given below in the command prompt window:

apt-cache search php5-

```
php5-intl - internationalisation module for php5
php5-lasso - Library for Liberty Alliance and SAML protocols - PHP 5 bindings
php5-librdf - PHP5 language bindings for the Redland RDF library
php5-mapscript - php5-cgi module for MapServer
php5-mcrypt - MCrypt module for php5
php5-memcache - memcache extension module for PHP5
php5-memcached - memcached extension module for PHP5, uses libmemcached
php5-midgard2 - Midgard2 Content Repository - PHP5 language bindings and module
php5-ming - Ming module for php5
php5-mysqld - MySQL module for php5 (Native Driver)
php5-ps - ps module for PHP 5
php5-radius - PECL radius module for PHP 5
php5-remctl - PECL module for Kerberos-authenticated command execution
php5-rrd - rrd module for PHP 5
php5-sasl - Cyrus SASL extension for PHP 5
php5-suhosin - advanced protection module for php5
php5-svn - PHP Bindings for the Subversion Revision control system
php5-sybase - Sybase / MS SQL Server module for php5
php5-tokyo-tyrant - PHP interface to Tokyo Cabinet's network interface, Tokyo Ty
rant
php5-uuid - OSSP uuid module for php5
php5-xcache - Fast, stable PHP opcode cacher
php5-xdebug - Xdebug Module for PHP 5
```

The terminal will display the possible libraries that can be installed. The list could be like this:

php5-cgi - server-side, HTML-embedded scripting language (CGI binary)
php5-cli - command-line interpreter for the php5 scripting language
php5-common - Common files for packages built from the php5 source
php5-curl - CURL module for php5
php5-dbg - Debug symbols for PHP5
php5-dev - Files for PHP5 module development
php5-gd - GD module for php5
php5-gmp - GMP module for php5
php5-ldap - LDAP module for php5
php5-mysql - MySQL module for php5
php5-odbc - ODBC module for php5
php5-pgsql - PostgreSQL module for php5
php5-pspell - pspell module for php5
php5-recode - recode module for php5
php5-snmp - SNMP module for php5
php5-sqlite - SQLite module for php5
php5-tidy - tidy module for php5
php5-xmlrpc - XML-RPC module for php5
php5-xsl - XSL module for php5
php5-adodb - Extension optimising the ADOdb database abstraction library
php5-auth-pam - A PHP5 extension for PAM authentication

After deciding on the modules to be installed they can be installed individually by keying in the following command in the command prompt window:

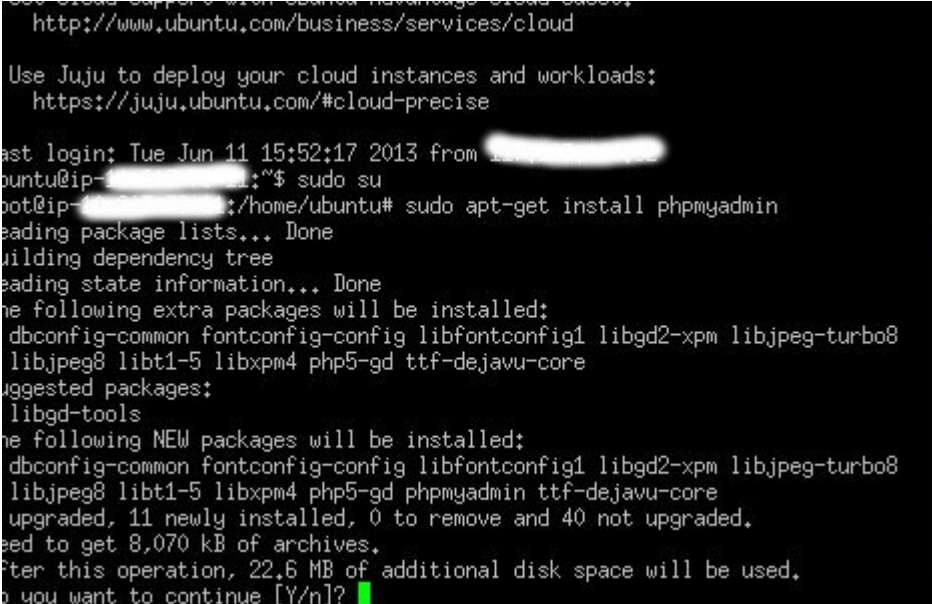
```
sudo apt-get install name of the module
```

These modules can also be installed after installing webmin via its GUI interface. This method is easy for a beginner.

PHPMyAdmin ¹¹ Installation

This script written in PHP provides a good GUI interface for managing SQL tables and data. Entire database of Mysql can be managed using this web interface. This takes away the pain of keying in commands in the command prompt window.

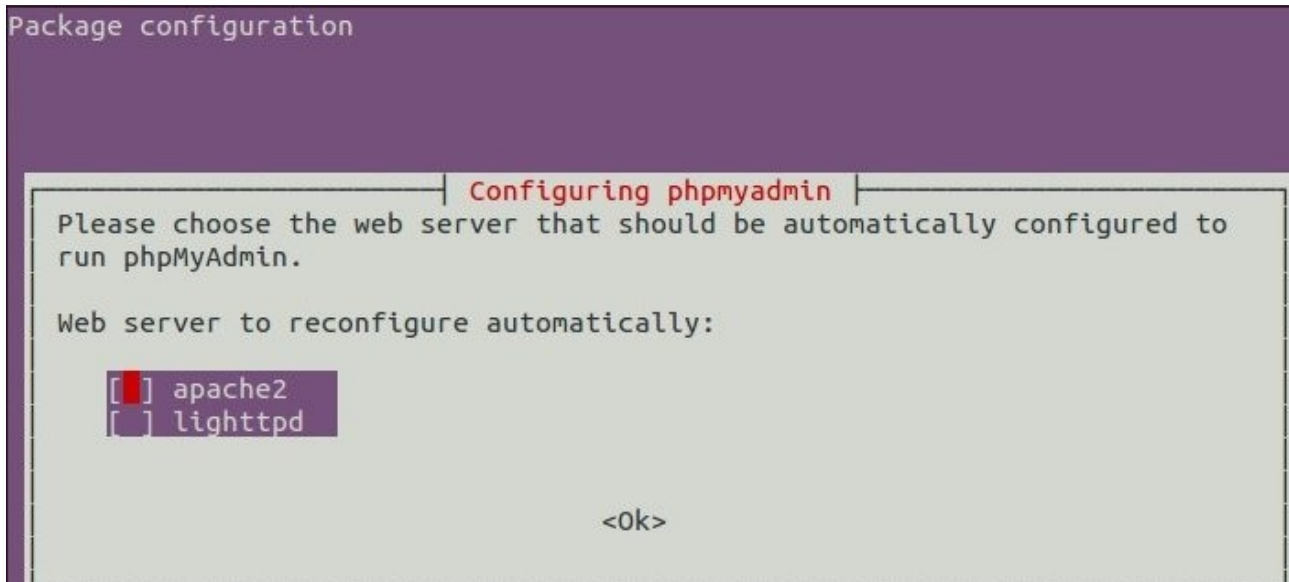
```
sudo apt-get install phpmyadmin
```

A terminal window screenshot showing the installation of phpmyadmin. The user is logged in as 'ubuntu' and runs 'sudo su' to become root. Then, they run 'sudo apt-get install phpmyadmin'. The terminal shows the package lists being read, the dependency tree being built, and the state information being read. It lists extra packages to be installed: dbconfig-common, fontconfig-config, libfontconfig1, libgd2-xpm, libjpeg-turbo8, libjpeg8, libt1-5, libxpm4, php5-gd, and ttf-dejavu-core. It also lists suggested packages: libgd-tools. The terminal then shows the NEW packages to be installed: dbconfig-common, fontconfig-config, libfontconfig1, libgd2-xpm, libjpeg-turbo8, libjpeg8, libt1-5, libxpm4, php5-gd, phpmyadmin, and ttf-dejavu-core. It shows that 11 packages will be newly installed, 0 will be removed, and 40 will not be upgraded. The total size of the archives to be downloaded is 8,070 kB, and the additional disk space required after installation is 22.6 MB. The terminal ends with a prompt asking if the user wants to continue [Y/n], with a green cursor visible.

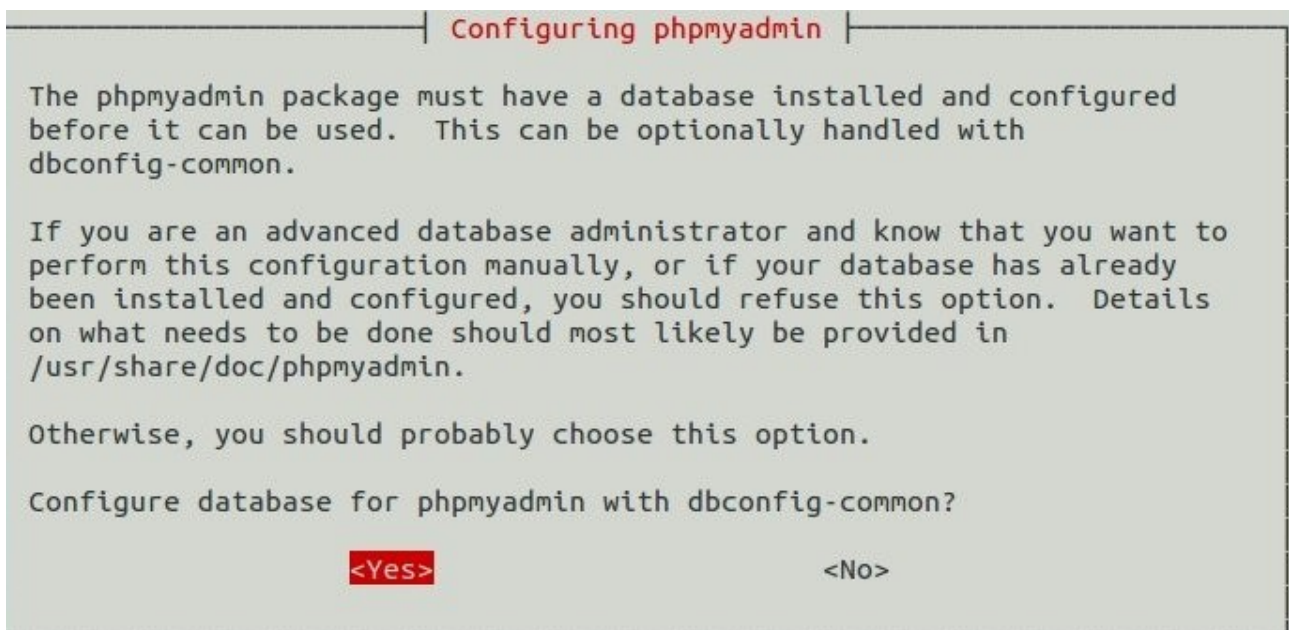
Screen shot showing command prompt seeking permission before installation of PHPMyadmin

During installation the PHPMysql installer will walk you through the various configuration parameters.

As a first step you need to select the server. In this case select Apache which will be the first one in the list. Selection can be made by pressing the space bar. Press the tab key till the OK button gets red and then press enter key for the settings to take effect.

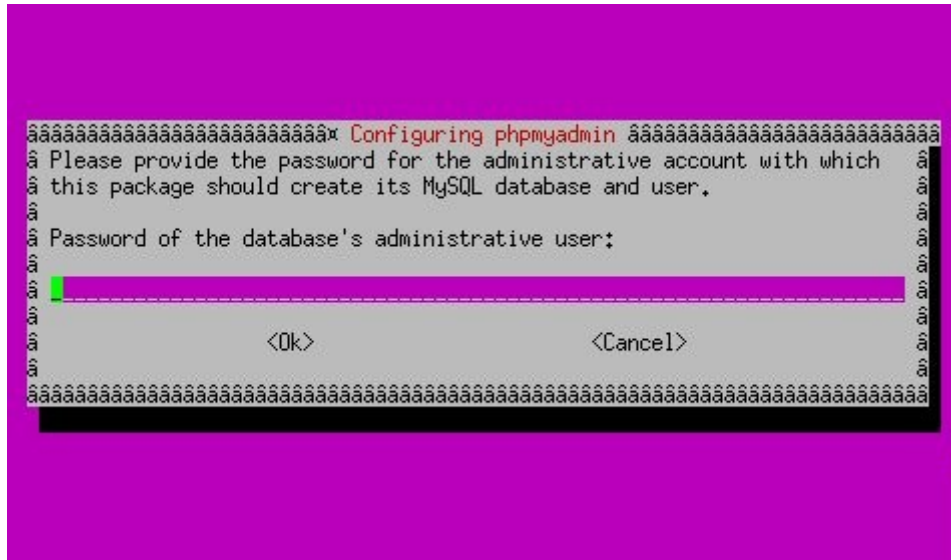


The next question the installer will pose is whether you want to configure the database for PHPMysql with db-config common. The answer should be yes.



In the next screen the installer will ask if you want to reset / change the mysql root password. If you had not set the root password during installation of mysql server now is the time to do it.

Otherwise you can safely skip this step.



After installation is complete phpmyadmin should be added to apache configuration file. This can be done using command line editor or the step can be deferred till you complete installation of webmin when you will have a comfortable GUI and text editor to do the job.

```
sudo nano /etc/apache2/apache2.conf
```

This command prompt will evoke nano editor in the command prompt window and you need to add the line given below to the apache2.conf. File displayed on your screen.

```
Include /etc/phpmyadmin/apache.conf
```

Now you need to restart apache server.

```
sudo service apache2 restart
```

PHPMyadmin installation can be checked by keying in the following in the address bar of your favorite web browser:

youripaddress/phpmyadmin



Welcome to phpMyAdmin

Language

English ▼

Log in 

Username:

Password:

Go

 Cookies must be enabled past this point.

This will be the screen displayed

You can enter the interface by giving:

user name: root

Password: your root password

phpMyAdmin

information_schema
mysql
performance_schema
phpmyadmin

localhost

Databases SQL Status Processes Privileges Export Import Variables Charsets More

General Settings

Change password

MySQL connection collation : utf8_general_ci

Appearance Settings

Language : English

Theme / Style: pmahomme

Font size: 82%

More settings

MySQL

- Server: Localhost via UNIX socket
- Server version: 5.5.31-0ubuntu0.12.04.2
- Protocol version: 10
- User: root@localhost
- MySQL charset: UTF-8 Unicode (utf8)

Web server

- Apache/2.2.22 (Ubuntu)
- MySQL client version: 5.5.31
- PHP extension: mysqli

phpMyAdmin

- Version information: 3.4.10.1deb1
- [Documentation](#)
- [Wiki](#)
- [Official Homepage](#)
- [Contribute](#)
- [Get support](#)
- [List of changes](#)

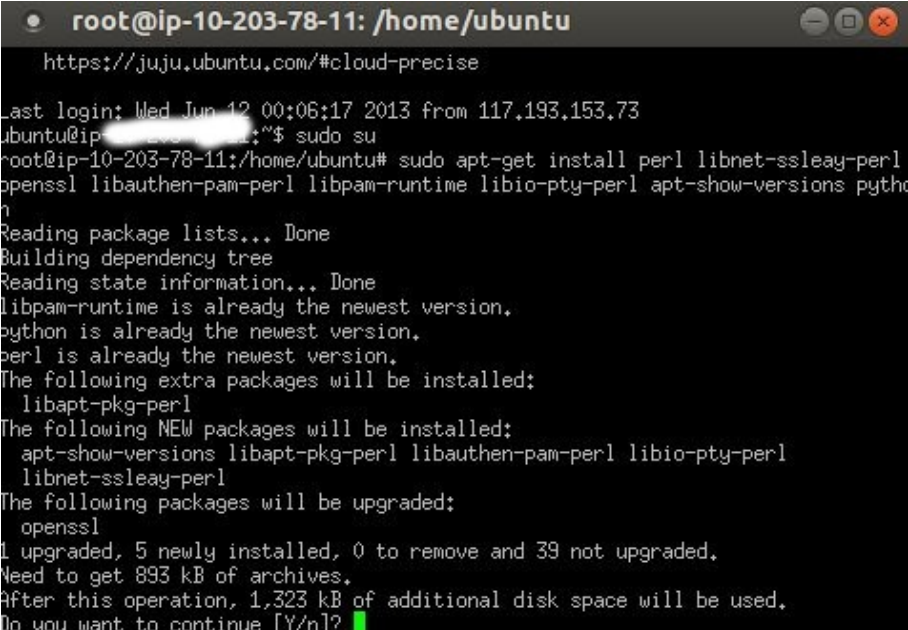
Webmin Installation

Webmin ¹⁰ is actually a web based open source control panel which can be used to configure and control the virtual private server. Configuration can be done using any of the modern browser interface. Java should be enabled in these browsers for using file manager module of webmin. It can be used to set up and configure user accounts, Apache configuration, DNS settings, file sharing etc. It can also be used to edit various linux configuration files.

Before actually attempting to install webmin the various Perl files need to be installed. This can be done by keying in the following command as root in the command prompt window of SSH client PUTTY.

```
sudo apt-get install perl libnet-ssleay-perl openssl libauthen-pam-perl  
libpam-runtime libio-pty-perl apt-show-versions python
```

After keying in the above command continuously and pressing the enter key the perl dependencies of webmin gets installed.



```
root@ip-10-203-78-11: /home/ubuntu
https://juju.ubuntu.com/#cloud-precise

Last login: Wed Jun 12 00:06:17 2013 from 117.193.153.73
ubuntu@ip-10-203-78-11:~$ sudo su
root@ip-10-203-78-11:/home/ubuntu# sudo apt-get install perl libnet-ssleay-perl
openssl libauthen-pam-perl libpam-runtime libio-pty-perl apt-show-versions python
n
Reading package lists... Done
Building dependency tree
Reading state information... Done
libpam-runtime is already the newest version.
python is already the newest version.
perl is already the newest version.
The following extra packages will be installed:
  libapt-pkg-perl
The following NEW packages will be installed:
  apt-show-versions libapt-pkg-perl libauthen-pam-perl libio-pty-perl
  libnet-ssleay-perl
The following packages will be upgraded:
  openssl
1 upgraded, 5 newly installed, 0 to remove and 39 not upgraded.
Need to get 893 kB of archives.
After this operation, 1,323 kB of additional disk space will be used.
Do you want to continue [Y/n]? █
```

Screen shot showing command prompt seeking permission to install perl

Webmin .deb package needs to be downloaded. This can be done easily by keying in the command given below:

```
wget http://prdownloads.sourceforge.net/webadmin/webmin_1.630_all.deb
```

```
1.630_all.deb [following]
--2013-06-12 00:45:45-- http://downloads.sourceforge.net/project/webadmin/webmin/1.630/webmin_1.630_all.deb
Resolving downloads.sourceforge.net (downloads.sourceforge.net)... 216.34.181.55
Reusing existing connection to prdownloads.sourceforge.net:80.
HTTP request sent, awaiting response... 302 Found
Location: http://iweb.dl.sourceforge.net/project/webadmin/webmin/1.630/webmin_1.630_all.deb [following]
--2013-06-12 00:45:46-- http://iweb.dl.sourceforge.net/project/webadmin/webmin/1.630/webmin_1.630_all.deb
Resolving iweb.dl.sourceforge.net (iweb.dl.sourceforge.net)... 70.38.0.134, 2607:f748:10:12::5f:2
Connecting to iweb.dl.sourceforge.net (iweb.dl.sourceforge.net)|70.38.0.134|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 21101770 (20M) [application/x-debian-package]
Saving to: `webmin_1.630_all.deb'

100%[=====>] 21,101,770  2.10M/s  in 12s

2013-06-12 00:45:57 (1.70 MB/s) - `webmin_1.630_all.deb' saved [21101770/21101770]

root@ip-10-10-10-10:~#
```

Screenshot of command prompt displayed on completion of webmin download

The downloaded package can be installed using the following command:

```
sudo dpkg i- webmin_1.630_all.deb
```

```
root@ip-100-100-100-100:/home/ubuntu# sudo dpkg -i webmin_1.630_all.deb
Selecting previously unselected package webmin.
(Reading database ... 50054 files and directories currently installed.)
Unpacking webmin (from webmin_1.630_all.deb) ...
Setting up webmin (1.630) ...
```

```
Unpacking webmin (from webmin_1.630_all.deb) ...
Setting up webmin (1.630) ...
Webmin install complete. You can now login to https://ip-100-100-100-100:10000/
as root with your root password, or as any user who can use sudo
to run commands as root.
```

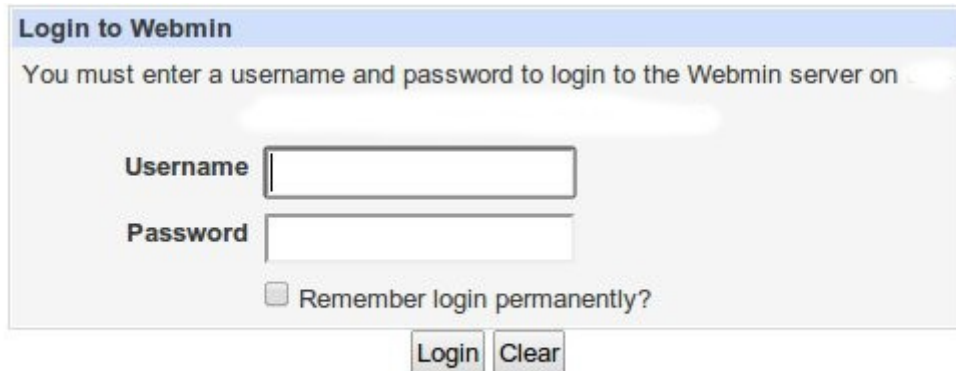
Screen shot showing webmin installation confirmation screen

Webmin can be accessed by keying in the following address in your favorite browser's address bar:

<https://yourIP:10000>

If you have a domain pointing to the virtual private server then it can be substituted for the IP address.

You need to ignore the browser warning which says that the certificate for the site cannot be trusted.

A screenshot of the Webmin login interface. It features a blue header bar with the text "Login to Webmin". Below the header, a message states: "You must enter a username and password to login to the Webmin server on". There are two input fields: "Username" and "Password". Below the password field is a checkbox labeled "Remember login permanently?". At the bottom, there are two buttons: "Login" and "Clear".

Login to Webmin

You must enter a username and password to login to the Webmin server on

Username

Password

☐ Remember login permanently?

Login **Clear**

In the log in screen as shown above you need to key in root as the user name and the root password of your linux virtual private server.

Login: root

- Webmin
- System
- Servers
- Others
- Networking
- Hardware
- Cluster
- Un-used Modules

Search:

[View Module's Logs](#)
[System Information](#)
[Refresh Modules](#)
[Logout](#)



System hostname

Operating system Ubuntu Linux 12.04.2

Webmin version 1.630

Time on system Wed Jun 12 01:03:56 2013

Kernel and CPU Linux 3.2.0-40-virtual on x86_64

Processor information Intel(R) Xeon(R) CPU E5430 @ 2.66GHz, 1 cores

System uptime 1 days, 0 hours, 28 minutes

Running processes 75

CPU load averages 0.00 (1 min) 0.09 (5 mins) 0.10 (15 mins)

CPU usage 2% user, 5% kernel, 7% IO, 86% idle

Real memory 590.19 MB total, 179.04 MB used

Local disk space 7.87 GB total, 1.73 GB used

Package updates 39 package updates are available

The 2 following Webmin module updates are now available ..

Module	Version	Fixes problem
Running Processes	1.632	Fixes total and free memory display on OpenVZ systems
Running Processes	1.631631	Fixes incorrect memory display on OpenVZ

[Install Updates Now](#)

This is the webmin screen. You can install updates by clicking the install updates button now.

Eprint Installation

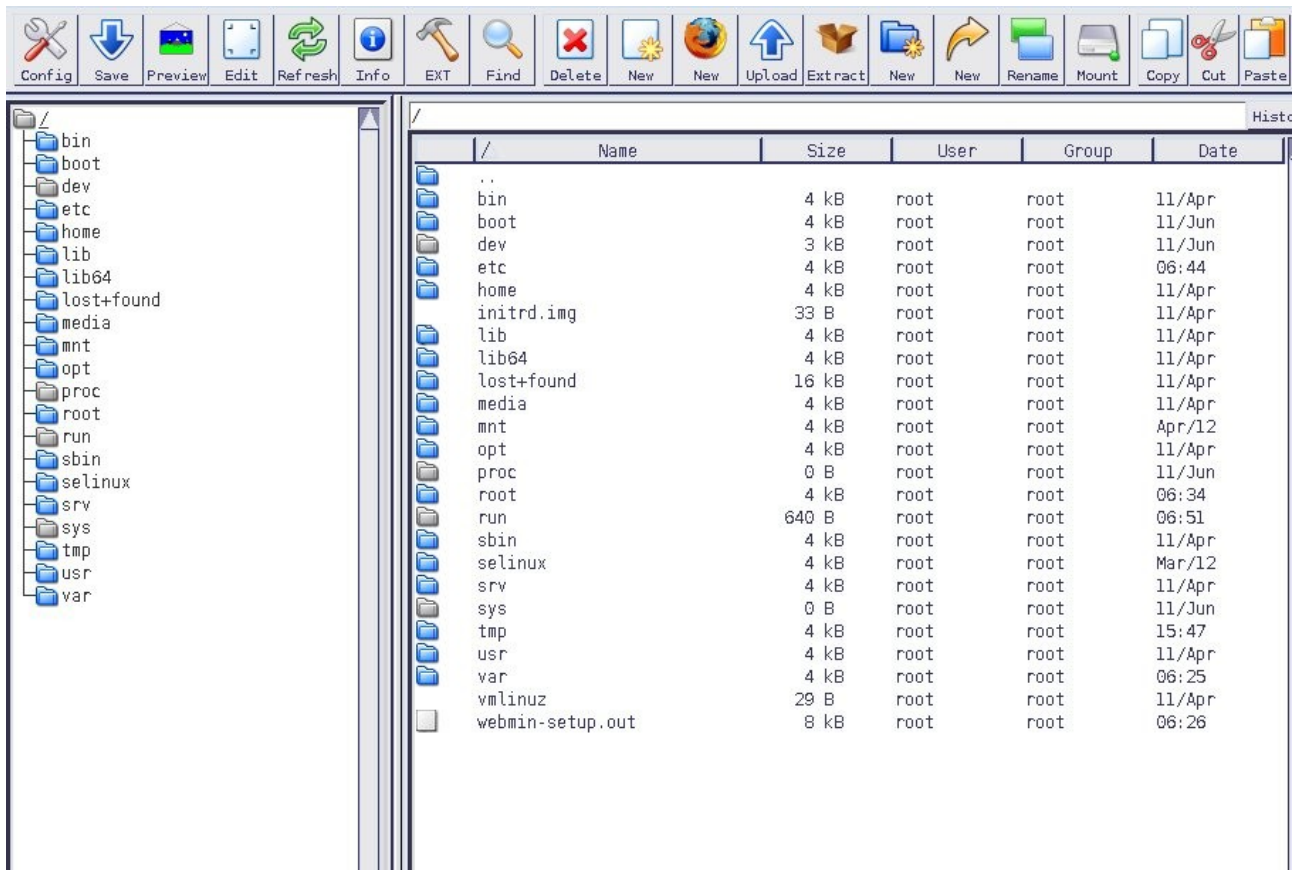
Main advantage of installing eprints in ubuntu is there are preconfigured installation files available, hence one need not encounter dependency issues during installation.

To install preconfigured eprint installation repositories need to be added to the ubuntu repo list. The list is present in /etc/apt/sources.list. The following lines need to be added to this list using the file browser feature of webmin.

Log into webmin using root password.

On the side bar click the others button.





On clicking the file manager this view will open up provided java is enabled in your browser.

```
## Uncomment the following two lines to add software from Canonical's
## 'partner' repository.
## This software is not part of Ubuntu, but is offered by Canonical and the
## respective vendors as a service to Ubuntu users.
# deb http://archive.canonical.com/ubuntu precise partner
# deb-src http://archive.canonical.com/ubuntu precise partner

deb http://security.ubuntu.com/ubuntu precise-security main
deb-src http://security.ubuntu.com/ubuntu precise-security main
deb http://security.ubuntu.com/ubuntu precise-security universe
deb-src http://security.ubuntu.com/ubuntu precise-security universe
# deb http://security.ubuntu.com/ubuntu precise-security multiverse
# deb-src http://security.ubuntu.com/ubuntu precise-security multiverse

deb http://deb.eprints.org/ stable/
deb-src http://deb.eprints.org/ source/
```

deb <http://deb.eprints.org/stable/>
deb-src http://deb.eprints.org/source

Log into the virtual machine using SSH client like PUTTY.

Become root user.

Key in:

sudo apt-get update

This command will update repository list by including eprint data.

Sudo apt-get install eprints

```
es [634 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com precise-updates/universe amd64 Pa
kages [206 kB]
Hit http://us-east-1.ec2.archive.ubuntu.com precise-updates/main i386 Packages
Get:17 http://us-east-1.ec2.archive.ubuntu.com precise-updates/universe i386 Pac
kages [209 kB]
Get:18 http://deb.eprints.org stable/ Packages [865 B]
Get:19 http://us-east-1.ec2.archive.ubuntu.com precise-updates/main TranslationI
dex [3,564 B]
Get:20 http://us-east-1.ec2.archive.ubuntu.com precise-updates/universe Translat
onIndex [2,850 B]
Hit http://us-east-1.ec2.archive.ubuntu.com precise/main Translation-en
Get:21 http://us-east-1.ec2.archive.ubuntu.com precise/universe Translation-en [
8,341 kB]
Get:22 http://deb.eprints.org source/ Sources [2,737 B]
Ign http://deb.eprints.org stable/ Translation-en_US
Get:23 http://us-east-1.ec2.archive.ubuntu.com precise-updates/main Translation-
en [290 kB]
Hit http://us-east-1.ec2.archive.ubuntu.com precise-updates/universe Translation
-en
Ign http://deb.eprints.org stable/ Translation-en
Fetched 15.8 MB in 10s (1,515 kB/s)
Reading package lists... Done
root@ip-172-31-72-101:/home/ubuntu# sudo apt-get install eprints
```

Command prompt showing installation of eprints


```

libio-socket-inet6-perl libio-socket-ssl-perl libjasper1 libjbig2dec0
libjson-perl libjson-xs-perl libkpathsea5 liblcms1 liblcms2-2 liblqr-1-0
libltdl7 liblua50 liblua50 liblwp-mediatypes-perl
liblwp-protocol-https-perl libmagickcore4 libmagickcore4-extra
libmagickwand4 libmail-sendmail-perl libmailtools-perl libmime-lite-perl
libmime-types-perl libmodule-find-perl libnet-http-perl libnetpbm10
libopenexr6 libpango1.0-0 libpaper-utils libpaper1 libpathplan4 libperl5.14
libpixmap-1-0 libpoppler19 libreadline5 librsvg2-2 libruby1.8
libsearch-xapian-perl libsepol1 libsm6 libsocket6-perl
libsys-hostname-long-perl libthai-data libthai0 libtie-ixhash-perl libtiff4
libtre5 libunicode-string-perl libunistring0 liburi-perl libwmf0.2-7
libwww-perl libwww-robotrules-perl libxaw7 libxcb-render0 libxcb-shm0
libxfont1 libxft2 libxml-libxml-perl libxml-libxslt-perl
libxml-namespacesupport-perl libxml-parser-perl libxml-sax-base-perl
libxml-sax-expat-perl libxml-sax-perl libxml-twig-perl libxml-xpath-perl
libxml2-dev libxmu6 libxp6 libxrender1 libxslt1.1 libxt6 lmodern luatex lynx
lynx-cur netpbm nullmailer pdftk po-debconf poppler-data poppler-utils
psutils tex-common texlive-base texlive-binaries texlive-common
texlive-doc-base texlive-luatex unzip x11-common xfonts-encodings
xfonts-utils xpdf
0 upgraded, 160 newly installed, 0 to remove and 39 not upgraded.
Need to get 115 MB of archives.
After this operation, 301 MB of additional disk space will be used.
Do you want to continue [Y/n]? █

```

Command prompt screen asking for confirmation to continue with eprint installation

```

liblwp-protocol-https-perl libmagickcore4 libmagickcore4-extra
libmagickwand4 libmail-sendmail-perl libmailtools-perl libmime-lite-perl
libmime-types-perl libmodule-find-perl libnet-http-perl libnetpbm10
libopenexr6 libpango1.0-0 libpaper-utils libpaper1 libpathplan4 libperl5.14
libpixmap-1-0 libpoppler19 libreadline5 librsvg2-2 libruby1.8
libsearch-xapian-perl libsepol1 libsm6 libsocket6-perl
libsys-hostname-long-perl libthai-data libthai0 libtie-ixhash-perl libtiff4
libtre5 libunicode-string-perl libunistring0 liburi-perl libwmf0.2-7
libwww-perl libwww-robotrules-perl libxaw7 libxcb-render0 libxcb-shm0
libxfont1 libxft2 libxml-libxml-perl libxml-libxslt-perl
libxml-namespacesupport-perl libxml-parser-perl libxml-sax-base-perl
libxml-sax-expat-perl libxml-sax-perl libxml-twig-perl libxml-xpath-perl
libxml2-dev libxmu6 libxp6 libxrender1 libxslt1.1 libxt6 lmodern luatex lynx
lynx-cur netpbm nullmailer pdftk po-debconf poppler-data poppler-utils
psutils tex-common texlive-base texlive-binaries texlive-common
texlive-doc-base texlive-luatex unzip x11-common xfonts-encodings
xfonts-utils xpdf
0 upgraded, 160 newly installed, 0 to remove and 39 not upgraded.
Need to get 115 MB of archives.
After this operation, 301 MB of additional disk space will be used.
Do you want to continue [Y/n]? yes
WARNING: The following packages cannot be authenticated!
  eprints
Install these packages without verification [y/N]? █

```

Command prompt seeking confirmation to continue installing unverified packages. Yes should be keyed in and enter key pressed once to proceed further

```
# ##
# Getting Started: ##
#   Before you can start using eprints you need to ##
#   configure your install, follow these simple steps: ##
# ##
# # su eprints ##
#   You have to logged in as the eprints user to operate ##
#   with eprints ##
# # cd ##
#   To the eprints home directory (/usr/share/eprints3) ##
# ##
# # ./bin/epadmin create ##
#   Follow the instruction to create your archive. ##
# ##
# # exit ##
# ##
# # a2ensite eprints3 ##
# ##
# # apache2ctl restart ##
# ##
#           ##### DONE ##### ##
# ##
# For more documentation please see the eprints wiki: ##
#   http://wiki.eprints.org/w/Documentation ##
```

Eprint installation completed.

After installation of eprint is completed now the installation should be configured. Eprint installation folder is present in /usr/share/eprints3. This should be remembered because it is important during configuration procedures.

Setting up a new repository:

This is the first step that should be taken during eprint configuration. For this to proceed a password need to be set up for eprint user.

passwd eprints

In the command prompt window key in the above command.

```
System information as of Wed Jun 12 15:18:15 UTC 2013

System load: 0.01          Processes:          78
Usage of /: 22.4% of 7.87GB Users logged in:      0
Memory usage: 50%          IP address for eth0: 10.203.78.11
Swap usage: 0%

Graph this data and manage this system at https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
  http://www.ubuntu.com/business/services/cloud

Use Juju to deploy your cloud instances and workloads:
  https://juju.ubuntu.com/#cloud-precise

42 packages can be updated.
19 updates are security updates.

Last login: Wed Jun 12 11:32:05 2013 from 117.193.157.18
ubuntu@ip-10-203-78-11:~$ sudo su
root@ip-10-203-78-11:/home/ubuntu# passwd eprints
Enter new UNIX password: █
```

In this screen shot you can see that you have the opportunity to create a password for eprint server. You need to key in the pass word and press enter twice.

```
System information as of Wed Jun 12 15:18:15 UTC 2013

System load: 0.01          Processes:          78
Usage of /: 22.4% of 7.87GB Users logged in:      0
Memory usage: 50%          IP address for eth0: 10.203.78.11
Swap usage: 0%

Graph this data and manage this system at https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
  http://www.ubuntu.com/business/services/cloud

Use Juju to deploy your cloud instances and workloads:
  https://juju.ubuntu.com/#cloud-precise

42 packages can be updated.
19 updates are security updates.

Last login: Wed Jun 12 11:32:05 2013 from 117.193.157.18
ubuntu@ip-10-203-78-11:~$ sudo su
root@ip-10-203-78-11:/home/ubuntu# passwd eprints
Enter new UNIX password: █
Retype new UNIX password: █
```

Screenshot showing the command prompt window asking for creation of password for eprint server

```
System load: 0.01      Processes:      78
Usage of /: 22.4% of 7.87GB   Users logged in: 0
Memory usage: 50%      IP address for eth0: [REDACTED]
Swap usage: 0%

Graph this data and manage this system at https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

Use Juju to deploy your cloud instances and workloads:
https://juju.ubuntu.com/#cloud-precise

12 packages can be updated.
19 updates are security updates.

Last login: Wed Jun 12 11:32:05 2013 from [REDACTED]
ubuntu@ip-[REDACTED]:~$ sudo su
root@ip-[REDACTED]:/home/ubuntu# passwd eprints
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
root@ip-[REDACTED]:/home/ubuntu# sudo su eprints
eprints@ip-[REDACTED]:/home/ubuntu$
```

Screen shot showing password for eprint server changed successfully

Now is the time to log into eprint server as root user with all privileges.

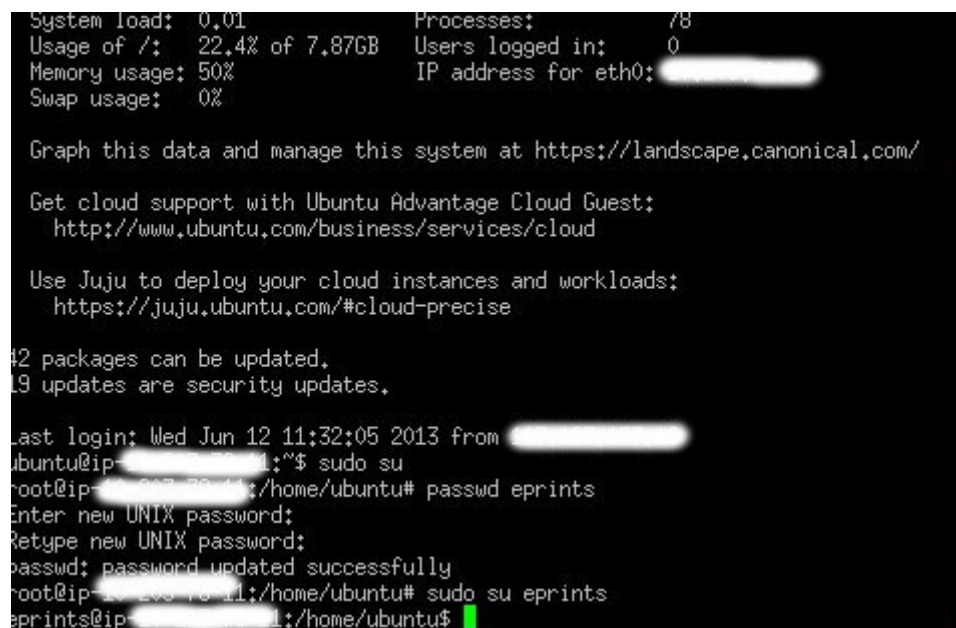
This you can do by keying in the following command in the command terminal.

sudo su eprints

You need to get into the folder in which eprints has been installed.

The command for this step is as follows:

```
cd /usr/share/eprints3
```



```
System load: 0.01      Processes:      78
Usage of /:  22.4% of 7.87GB   Users logged in: 0
Memory usage: 50%      IP address for eth0: 
Swap usage:  0%

Graph this data and manage this system at https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
  http://www.ubuntu.com/business/services/cloud

Use Juju to deploy your cloud instances and workloads:
  https://juju.ubuntu.com/#cloud-precise

42 packages can be updated.
19 updates are security updates.

Last login: Wed Jun 12 11:32:05 2013 from 
ubuntu@ip-10-20-20-1:~$ sudo su
root@ip-10-20-20-1:/home/ubuntu# passwd eprints
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
root@ip-10-20-20-1:/home/ubuntu# sudo su eprints
eprints@ip-10-20-20-1:/home/ubuntu$
```

Screen shot showing sudo su eprints command being executed

```

Usage of /: 22.4% of 7.8/GB  Users logged in: 0
Memory usage: 50%          IP address for eth0: [REDACTED]
Swap usage: 0%

Graph this data and manage this system at https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
  http://www.ubuntu.com/business/services/cloud

Use Juju to deploy your cloud instances and workloads:
  https://juju.ubuntu.com/#cloud-precise

42 packages can be updated.
19 updates are security updates.

Last login: Wed Jun 12 11:32:05 2013 from [REDACTED]
ubuntu@ip-[REDACTED]:~$ sudo su
root@ip-[REDACTED]:/home/ubuntu# passwd eprints
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
root@ip-[REDACTED]:/home/ubuntu# sudo su eprints
eprints@ip-[REDACTED]:/home/ubuntu$ cd /usr/share/eprints3
eprints@ip-[REDACTED]:~$ ./bin/epadmin create

```

Screen shot showing ./bin/epadmin create being used

```

Use Juju to deploy your cloud instances and workloads:
  https://juju.ubuntu.com/#cloud-precise

42 packages can be updated.
19 updates are security updates.

Last login: Wed Jun 12 11:32:05 2013 from [REDACTED]
ubuntu@ip-[REDACTED]:~$ sudo su
root@ip-[REDACTED]:/home/ubuntu# passwd eprints
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
root@ip-[REDACTED]:/home/ubuntu# sudo su eprints
eprints@ip-[REDACTED]:/home/ubuntu$ cd /usr/share/eprints3
eprints@ip-[REDACTED]:~$ ./bin/epadmin create

Create an EPrint Repository

Please select an ID for the repository, which will be used to create a directory
and identify the repository. Lower case letters and numbers, may not start with
a number. examples: "lemurprints" or "test3"

Archive ID? otolaryngology

```

Screen shot showing command window asking for archive ID

You will be prompted to provide archive ID. This ID will actually be used to create a directory in the eprint server and will also serve as an identification of the repository. Lower case letters and numbers can be used. The name should not start with a number. For testing purposes you can use the name “test1” for the archive. After choosing a name for archive ID a folder by that name will be created and relevant config files will be copied to it.

The command prompt will ask for confirmation to configure vital settings. The answer should be yes followed by a press of enter key.

```
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/static/style
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/static/style/images
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/static/style/auto
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/autocomplete
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/cfg.d
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/lang
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/lang/en
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/lang/en/static
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/lang/en/static/help
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/lang/en/phrases
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/workflows
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/workflows/eprint
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/workflows/user
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/themes

Ok, I've created the initial config files and directory structure.
I've also created a "disk0" directory under documents/ if you want
your full texts to be stored on a different partition then remove
the disk0, and create a symbolic link to the directory you wish to
store the full texts in. Additional links may be placed here to be
used when the first is full.

Configure vital settings? [yes] ? █
```

Scree shot showing the installer seeking premission to configure vital settings

After giving yes and hitting the enter key further queries regarding other configuration settings will be posed by the eprint server to you.

Host name: You need to give a host name in this window. It is actually the name when keyed in to your browser address bar will take you to the repository archive. You should already have a domain registered with a domain registrar and your domain should be pointing to the IP address of your virtual private server.

```

Installing: /usr/share/eprints3/archives/otolaryngology/cfg/workflows/eprint
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/workflows/user
Installing: /usr/share/eprints3/archives/otolaryngology/cfg/themes

Ok, I've created the initial config files and directory structure.
I've also created a "disk0" directory under documents/ if you want
your full texts to be stored on a different partition then remove
the disk0, and create a symbolic link to the directory you wish to
store the full texts in. Additional links may be placed here to be
used when the first is full.

Configure vital settings? [yes] ? yes
Core configuration for otolaryngology

Please enter the fully qualified hostname of the repository.

For a production system we recommend against using the real hostname of the
machine.

Example: otolaryngology.footle.ac.uk
Hostname? otolaryngology.co.in

```

For production system it is better not to use the real host name. You can always use “your archive name.localdomain.”

Now comes the query regarding web server port.

Which port do you want to serve your archive on? The default port happens to be 80 and would be already entered there. If you want to stay with the default port just give enter and proceed to the next screen.

Now comes the screen for alias:

Here you can enter any number of aliases which will take users to the archive. You can serve your repository in various aliaes like eprints.mine.org, eprints.archive.org. After you have completed giving aliases you need to enter # and press enter key once. These aliases should be taken into consideration while configuring domain name that points towards the archive. This setting redirects requests from various aliases to the archive you have specified.

When the configuration screen asks for confirmation to redirect all your choosen aliases to the host name give yes and press enter key once.

In the next screen you will be asked to enter the path part of the repository's Base URL. This should be very simple. If you can't think of something just accept the default given [/] by pressing enter key once.

In the next screen you will be given an opportunity to configure https host name. If you want to use secure server for log in pages you need to give the name in this screen. Otherwise you can skip this step by pressing the enter button once.

Next comes the screen asking you to specify email of administrator. This will enable repository users to contact you. Please give the admin email account name in this screen.

The installer will now ask for the archive name. This is the full name of the repository you are creating. It will also be displayed in the title bar of the browser displaying the archive. Just key in the desired name and press enter key once.

The next question seen in the command prompt window would be a confirmation and permission to write those specified settings. If the answer is no then you say no and press enter key once, then one needs to start repository configuration right from the start again. If yes it takes you to the next screen.

Next settings screen one needs to focus is on the database configuration settings for the archive in question. In order for you to start this configuration you need to say yes to launch `config_db archive_id`. On launching `config_db archive_id` you will be presented with a screen where you can name the database. It is always better to choose the default name which happens to be the name of the archive. It would have already been chosen by you by eprints server. All you need is to press the enter key once to accept default settings. Similarly you can choose the default settings for host, port and socket settings of the mysql database. All you need to do is to keep pressing the enter key for each of these settings to accept the default values.

In the next screen user of database will be chosen. If you are not particular to have a unique name you are welcome to choose the default user name and eprints will keep track of it. The same goes for the choice of database user password. You can choose the default password allotted by eprints server by pressing the enter key once. You need not remember these details also. Eprints will keep track of them all for you. The configure screen will ask you for confirmation whether these settings could be written to the database.

You can press enter button to accept all the database settings. In order to write to the database eprints need to know your root user name and password for the mysql server. This was already set by you while you installed mysql server in your virtual machine. Now is the time to enter the user name (which is root in this case) and root password when the prompt asks. You need to press enter key after keying in the root user name and press enter again after keying in the root password.

After the database has been successfully created the eprint server will offer to create user for administering the repository. Now is the time to choose user name and press enter. While choosing the password you cannot start with a number or special character. Don't bother you can always change the password after installation. In the next prompt you will be asked the role which the created user is supposed to play (admin, user etc). In this case one needs to choose admin as the role. Then you will be asked for email id of the user which you need to key in now and press enter

key immediatly there after.

You need to give yes when permission is sought by eprint server to create LOC subjects, create static pages etc.

The next query will be whether you want to update apache config files. It would also remind you to verify whether the include line for eprint server has been added to apache config file. This can be verified by making sure that eprints3 file is in /etc/apache2/sitesavailable/ folder and eprints3 file contain the following line: Include /usr/share/eprints3/cfg/apache.conf.

```
Reindexing item: subject/fac_med
Reindexing item: subject/sch_art
Reindexing item: subject/sch_bio
Reindexing item: subject/sch_che
Reindexing item: subject/sch_civ
Reindexing item: subject/sch_ecs
Reindexing item: subject/sch_edu
Reindexing item: subject/sch_eng
Reindexing item: subject/sch_geo
Reindexing item: subject/sch_hum
Reindexing item: subject/sch_law
Reindexing item: subject/sch_man
Reindexing item: subject/sch_mat
Reindexing item: subject/sch_med
Reindexing item: subject/sch_phy
Reindexing item: subject/sch_psy
Reindexing item: subject/sch_soc
Reindexing item: subject/subjects
Done reindexing
Ending EPrints Repository.

Exiting normally.
Do you want to update the apache config files? (you still need to add the
'Include' line) [yes] ? yes
```

Screen shot showing configuration screen seeking permission to update apache config files

```
Now make any required changes to the cfg files.

Note that changing the metadata configuration may require the database
tables to be regenerated. epadmin erase_data will regenerate the
eprints and documents tables only. erase_data will regenerate everything.
(nb, these also do erase the contents of the tables, and any uploaded
files).

Make sure that your main apache config file contains the line:

    Include /usr/share/eprints3/cfg/apache.conf

Then stop and start your webserver:
Often:
    /etc/rc.d/init.d/httpd stop
    /etc/rc.d/init.d/httpd start
(or maybe /usr/local/apache/bin/apachectl stop & start)

And then try connecting to your repository.
-----
Don't forget to register your repository at http://roar.eprints.org/

eprints@ip-10-203-78-11:~$
```

Screen shot of the configuration screen after completion of configuration settings
These are the steps performed during configuration of the eprint server ¹²

Create an EPrint Repository

Please select an ID for the repository, which will be used to create a directory and identify the repository. Lower case letters and numbers, may not start with a number. examples: "entprints" or "test3"

Archive ID? uclapr

We need to create /var/lib/eprints3/archives/uclapr, doing it now...

Getting uid and gid information for apache

UID: 48

GID: 48

Configure vital settings? [yes] ? yes

Hostname? eprints.adastral.ucl.ac.uk

Webserver Port [80] ? 80

Please enter all the aliases which could reach the repository, and indicate if you would like EPrints to write a Redirect Rule to redirect requests to this alias to the correct URL.

Some suggestions:

eprints.adastral

eprints

Enter a single hash (#) when you're done.

Alias (enter # when done) [#] ? eprints.adastral

Redirect entw-server to entw-server.grs.de [yes] ?

Alias (enter # when done) [#] ? #

Please enter the path part of the repository's base URL. This should probably be '/'. Path [/] ?

Path [/] ?

If you will use https for your user pages (including login) enter the https hostname here, or leave blank when using http only.

Hostname?

Administrator Email? *****@adastral.ucl.ac.uk

Archive Name [Test Repository] ? UCL Adastral Park Repository

Write these core settings? [yes] ? yes

Configuring Database for: uclapr

Database Name [uclapr] ? *****

MySQL Host [localhost] ? localhost

MySQL Port (# for no setting) [#] ?

MySQL Socket (# for no setting) [#] ?

Database User [*****] ?

Database Password?

Write these database settings? [yes] ? yes

Create database "uclapr" [yes] ?

Database Superuser Username [root] ?

Database Superuser Password?

Create database tables? [yes] ?

Create an initial user? [yes] ?

Enter a username [admin] ?

Select a user type (user|editor|admin) [admin] ?

Enter Password? *****

Email? *****@adastral.ucl.ac.uk

Do you want to build the static web pages? [yes] ?

Do you want to import the LOC subjects? [yes] ? no (I have a custom subject file)

Do you want to update the apache config files? (you still need to add the 'Include' line) [yes] ? yes

You need to restart apache server now.

There are two ways to restart the apache server now.

Restarting apache server using command prompt window:

For this to happen you need to get out of the eprint server which you have been configuring for so long. Just type *exit* in the command prompt and press enter key once. This will take you out of the eprint server and push you into the virtual machine. Now you key in the command given below to restart apache server.

```
sudo service apache2 restart
```

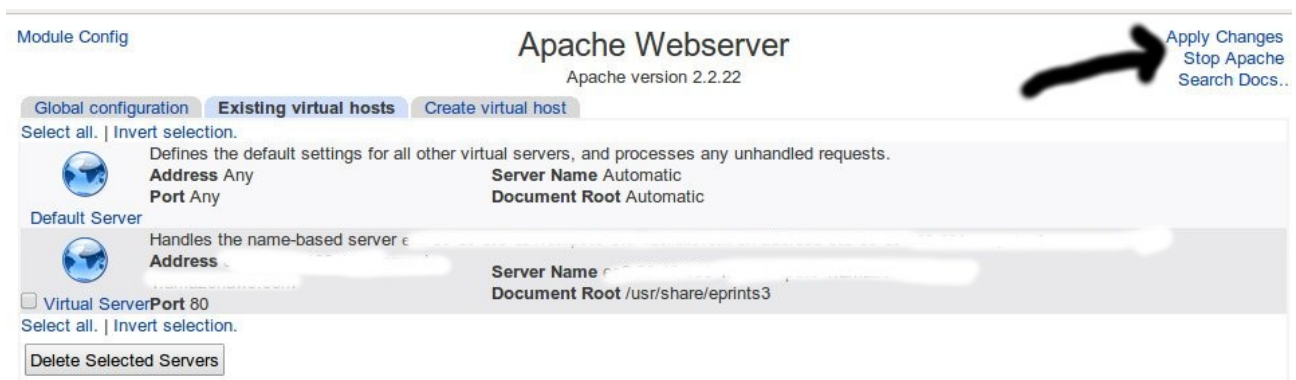
This will restart the server.

The next method is to restart apache server via webmin. For this you need to log into webmin interface using your browser. You need to key in the user name and password to access the interface.

In the webmin interface side bar click the servers button. It will open up showing a server list. Choose apache from the list to take you to the apache config screen.

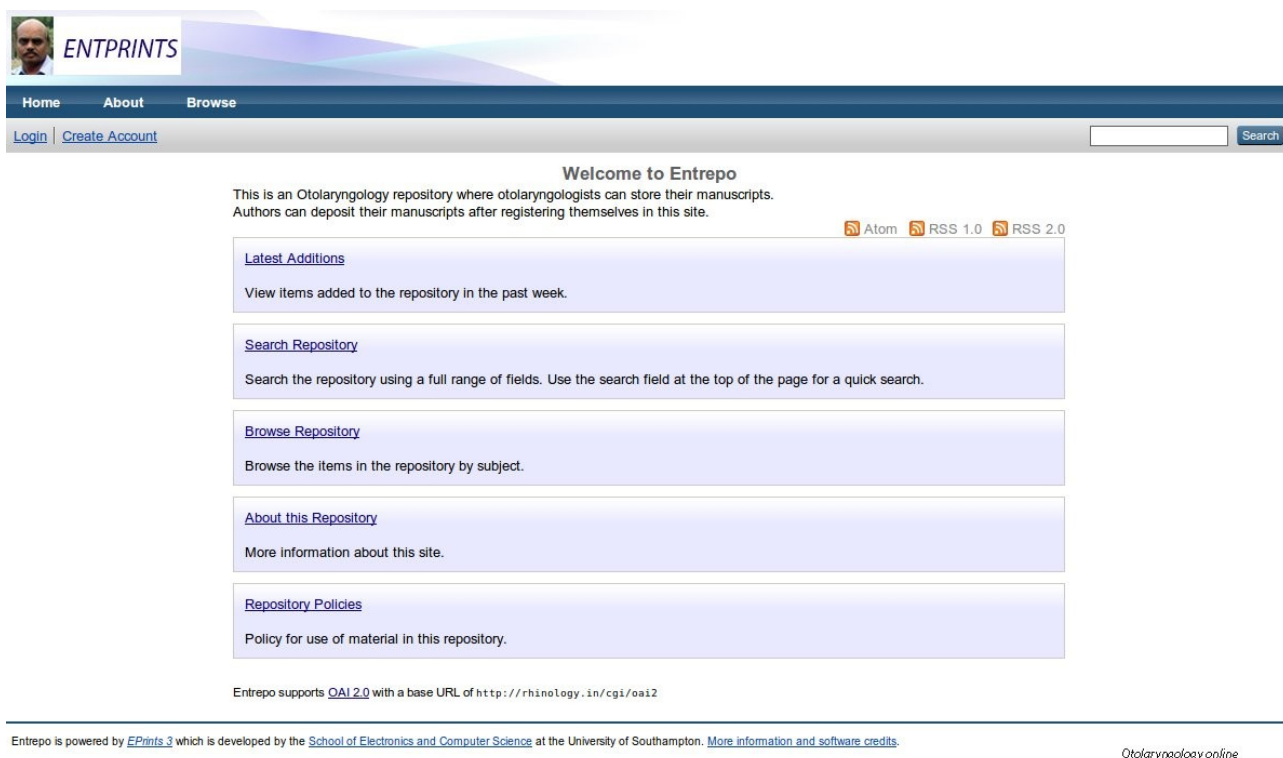


Screenshot of webmin interface showing the list of servers



In the apache webserver screen you will see stop apache button which can be clicked and toggled with start apache

If you key in your IP in the browser address window you should be able to see eprints log in screen.



Screenshot showing eprints log in screen

Regular maintenance of eprint installation is a must. The following tasks need to be performed frequently because EPrints front end web pages and abstracts **are not** automatically updated when you make changes to the repository. To apply your changes and update the web pages:

1. Generate views
2. Generate statistics
3. Generate abstracts.

These maintenance tasks can easily be performed using command prompt window.

Using SSH client PUTTY you should log into your virtual machine as root.

1. *sudo su eprints*
2. *In the next prompt enter eprint server user password*
3. *You will be logged into eprints server*

Key in the following command to generate views:

bin/generate_views yourarchivename

Key in the following command to generate statistics:

bin/generate_static yourarchivename

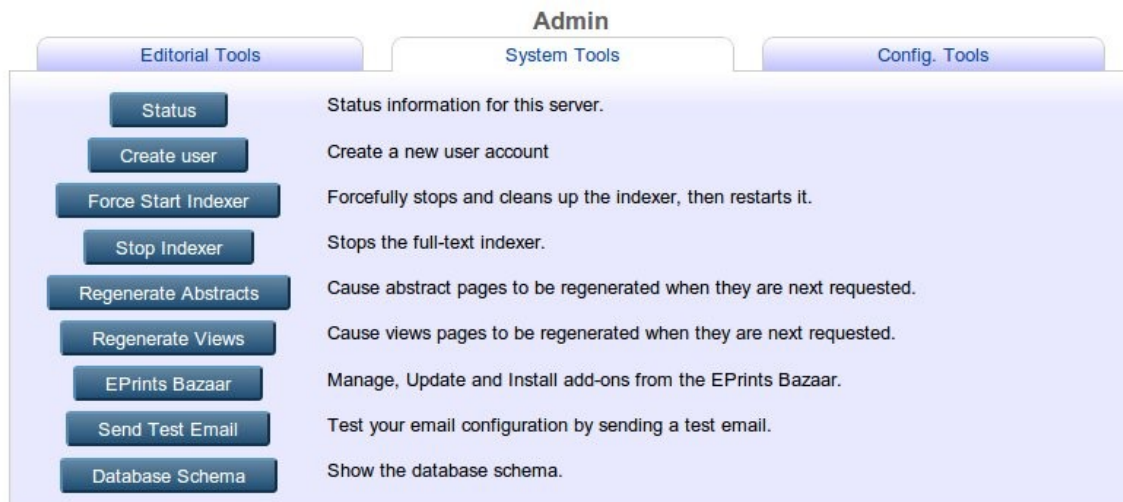
Key in the following command to generate abstracts:

bin/generate_abstracts yourarchivename

Remember you need to press enter button after giving each command for it to be executed.

The above said tasks can also be performed using eprint admin interface.

First you need to log into eprint site as admin using the admin user name and password. This can be done via browser interface. Now on clicking the admin button you will be taken to admin interface where you can perform these tasks by clicking the appropriate buttons.



Eprint admin interface where one can perform maintenance tasks

References:

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3. <http://www.openarchives.org/news/ups1-press.htm>
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5. http://en.wikipedia.org/wiki/Virtual_private_server
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8. "What is MySQL?". MySQL 5.1 Reference Manual. Oracle. Retrieved 17 September 2012. "The official way to pronounce “MySQL” is “My Ess Que Ell” (not “my sequel”)"
9. https://en.wikipedia.org/wiki/Rasmus_Lerdorf
10. <http://www.webmin.com/intro.html>
11. <http://en.wikipedia.org/wiki/PhpMyAdmin>
12. http://wiki.eprints.org/w/Getting_Started_with_EPrints_3

Explanation of terms used in this book:

1. Repository – Indicates a location for safe storage and preservation
2. OAI – Open archives initiative – Document standard that facilitates efficient dissemination of digital content
3. LAMP – This is actually a software bundle comprising Linux (operating system), Apache (Web server) MySQL (Database software) PHP, PERL, and Python (the languages used in developing this software)
4. GUI – Graphic user interface.
5. SSH - Secure shell is a cryptographic network protocol used for secure data communication via command line.
6. Apache – this is an opensource server software. Rough estimates reveal that nearly 50% of world's servers run apache. This is a http server.
7. SQL – Means structured query language
8. Database – This application stores a collection of data. The common application used for this purpose is MySQL server.